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PROPER TREATMENT

FOR

Lacerations of the Cervix Uteri.

BY

THOMAS ADDIS EMMET, M. D.

Surgeon to the Woman's Hospital of the State of New York.

REPRINTED FROM AMERICAN PRACTITIONER, JANUARY, 1877.

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LACERATIONS OF THE CERVIX UTERI.

Two years ago I published in the American Journal of Obstetrics a paper on laceration of the cervix as a frequent and unrecognized cause of disease. Since that time the subject has attracted much attention, both at home and abroad. The operation I then described has been the means of relieving a number of cases, which without it would have been incurable. But, unfortunately, too much has been expected of the operation; it has been performed frequently without understanding its principles, and generally without the proper preparatory treatment. The consequence has been that, within the circle of my professional acquaintance, I have already heard expression of disappointment from not gaining the good results which had been promised for the operation. But if the same degree of judgment be exercised for this operation as would be shown in preparing a patient, in the proper manner, for any other surgical procedure, there would be less disappointment.

If cellulitis had existed at a previous date, and it is a very common result of the injury, it will recur in nearly every instance after the operation, if it be performed before all trace of the inflammation has disappeared. I have known patients to be subjected to the operation when the flaps were almost in a strangulated condition, and rolled out to the internal os, from the presence of hundreds of mucous follicles which had undergone cystic degeneration. That each suture should cut

out and the operation fail utterly, is a natural consequence. Even were it possible to gain perfect union between the edges, under these circumstances, there would be no improvement in the condition of the patient with such a source of irritation and with the circulation so obstructed by pressure.

Again, if the surfaces to be brought together are to be thoroughly scraped or bruised and lacerated by the serrated scissors, the proper union can not be gained. It is necessary that these flaps should be freshened by as smooth and as clean a cut surface as possible, and that they should be adjusted with a reasonable degree of accuracy, to gain the necessary union by the first intention.

A very frequent cause of failure in this and other operations, where the metallic suture is used, is due to strangulation of the parts from twisting the sutures too tight.

We rarely see a case of laceration of the cervix, extensive enough to produce trouble, which is not benefited by some treatment previous to the operation, since the uterus is enlarged with generally an erosion and displacement of the organ. These cases, after careful local treatment, are frequently relieved; but so long as the lacerations exist, they will be liable to relapse, time and again, until at length changes in size and structure render the condition almost incurable.

It has never been claimed that the simple operation would overcome every difficulty, but that it would improve the local condition beyond what had been gained by previous treatment, and would keep the patient from relapse afterwards. From one to three months is required for the preparatory treatment. If the condition be then favorable, after the operation, the uterus will rapidly decrease in size, and the case will seldom require any further treatment.

The effect of this injury, if it be lateral, is to arrest involution, in consequence of the irritation kept up by the flaps separating to the fullest extent so soon as any attempt is made to assume the upright position. As this injury occurs from rapid labor, or where it has been necessary to apply the forceps or traction, the perinæum is also frequently ruptured.

With the loss of the proper support, and the uterus enlarged, prolapse must occur so that the organ will lie on the floor of the pelvis, with frequently some degree of retroversion.

The flaps are forced further apart with all attempt at exercise, as the posterior one is caught on the posterior wall of the vagina, and the anterior one is crowded towards the vaginal outlet in the direction offering the least resistance. If the lacerated surfaces should have healed over, while the female remained in bed after her labor, they soon become the seat of an extensive erosion and readily bleed. The uterus begins to increase in size, a profuse leucorrhœa follows, and in consequence of a frequent show and difficulty in walking, she seeks relief from her physician.

This condition of laceration, until recently, has been mistaken for ulceration, and sometimes for the early stages of epithelioma, as well as for corroding ulcer of the uterus. As the lips are soft, and have become flattened on the floor of the pelvis, the injury can not always be recognized by the eye. When the patient is examined on the back, the condition can be easily detected by means of the finger, if the laceration be a double one, since the lips are felt to be much wider than the body of the uterus above. Place the patient then on the left side, and with Sims's speculum bring the cervix into view. If the posterior lip be drawn forward with a tenaculum in one hand, and the anterior flap be brought in contact, with a tenaculum in the other, the parts will be rolled in and the cervix be found frequently smaller than natural.

A lateral laceration to the right or left is more difficult to detect by aid of the eye, since the cervix presents an equal length on both sides. When the laceration has taken place on one side, and with inflammation in the nearest broad ligament frequently following the injury, the uterus becomes drawn to the injured side. This version not only results from the cellulitis, shortening the inflamed ligament, but as the flaps separate the two edges and uninjured side form a tripod with two legs shorter than the third one, the uterus would, therefore, necessarily be tilted to one side. This causes the

parts which had been torn down to the vaginal junction to project into the passage at the same length as the uninjured side, and being covered by a portion of the vaginal wall, the cervix presents almost a natural appearance. In a case of doubt, the injury is easily detected by placing the patient on the knees and elbows. As the speculum is then introduced, the vagina becomes distended by atmospheric pressure, and by the aid of gravity the uterus is brought into its proper position. When this is done a deep cleft in the cervix appears, extending not only to the junction but frequently beyond for some distance into the vaginal wall itself. When the uterus is tilted to one side from this injury, the sound can be passed in the median line to the fundus without giving by its use any indication of the true condition. The explanation is that the sound passes through a patulous os, along the angle of the rent on one side of the cervix, to the horn of the uterine canal on the opposite side, the direction from these two points being brought into the axis of the vagina from the position of the uterus.

Large hot water vaginal injections must be used once or twice a day, until all tenderness on pressure, which may have been detected by means of the finger, has disappeared. To hasten this the frequent application of iodine to the abdominal wall, over the seat of the old cellulitis, or a small blister, is of great benefit. If the broad ligament has become thickened and shortened, from the previous inflammation, the whole weight of the uterus will come upon this line, whenever the female is in the upright position. Frequently an old cellulitis is kept alive, as it were, from this single source of irritation not being appreciated. One of the first steps to be taken in the treatment of this condition is to fit a closed lever pessary, properly curved, in the posterior cul de sac of the vagina, to lift the uterus from the floor of the pelvis. The uterus must be first anteverted by means of the index finger in the vagina, and the pessary be then so curved as to keep the organ in this position. This is important, for by keeping the uterus anteverted the flaps can not gape apart to any extent, and by pre-

venting this we remove a source of irritation. To fit the pessary properly requires some judgment, for if the uterus is lifted too high in the pelvis, we will produce the condition we wish to avoid by again putting the shortened broad ligament on the stretch. The best guide is the sense of relief felt by the patient, and her unconsciousness of the presence of the instrument from pressure at any point. Frequently it is necessary to narrow the pessary, in its long diameter, in the neighborhood of the thickened broad ligament. If straight, as the pessary is usually formed, it will cause lateral pressure on the vaginal walls at this point, and create so much irritation that the use of the instrument would have to be abandoned.

After a double laceration of the cervix, a partial constriction is often produced in the neck as the parts cicatrize; and especially is this the case when the tear has passed beyond into the vaginal tissue. This is often sufficient in extent to obstruct the circulation in the flaps when aided by cystic degeneration of the mucous follicles. The starting point is the irritation set up by forcing the flaps apart, as we have stated, when the female is in the upright position. The mucous follicles become inflamed, with their outlets blocked up; they then undergo cystic degeneration, and each becoming distended with fluid the mucous membrane will be gradually rolled out from this cause even to the internal os. Consequently the flaps become almost in a strangulated condition; the effect in fact is similar to paraphimosis. These little cysts can be felt scattered through the neck, as if so many shot were embedded in the tissues.

The next and most important step in the preparatory treatment is to relieve this congested condition by puncturing the cysts. A small, lance-shaped knife is needed for the purpose, and it is not necessary to pick out each individual cyst. The whole lacerated surface may be gone over by little stabs in every direction, and the point of the instrument will penetrate the distended cysts with less force than it will enter the tissue of the cervix. Scarcely an ounce of blood will be lost under

any circumstances, but with emptying the cysts and this bleeding, the size of the flaps will be greatly reduced. Churchill's tincture of iodine is then to be passed into the uterine canal, and applied freely over the surface in which the cysts have been punctured. After this has been done, the flaps are to be brought together and kept in contact by a portion of cotton saturated with glycerine, which will crowd the neck into the posterior cul de sac. The cotton should have a string attached so that it could be removed after five or six hours, when it would begin to get dry and would irritate. These scarifications are to be repeated and the iodine applied from time to time until the cysts have all disappeared, the flaps reduced in size, and the erosion greatly lessened in extent or healed. If the operation be now performed, after the different sources of irritation have been removed, the uterus will reduce rapidly in size, and the female will not only regain her health but will remain in the full enjoyment of it afterwards.

In my former description of this operation I advised that the surfaces should be freshened by means of scissors, leaving, in a double laceration, an undenuded tract across the flaps, at a right angle to the line of laceration but of a uniform width, which would form, when brought together, the cervical portion of the uterine canal. Since that time, having closely watched the condition and changes after the operation in a number of cases, I have found that the os sometimes becomes too small. My rule in operating had been to leave this undenuded tract of the same width of the canal as it appeared at the bottom of the laceration, which was generally at or near the internal os. I considered this a sufficient guide, for although the uterine walls were always hypertrophied, the caliber of the canal, above the laceration, always remained of a natural size. But it has been found, when the new canal was made of the same diameter between the hypertrophied flaps, it became too small after the operation as soon as the uterus and cervix returned to a natural size. By the former method of operating, each of the two freshened surfaces represented nearly half a circle, with a narrow, undenuded strip between them, which would

form the canal when the two flaps were brought up together in contact. By my present plan, to obviate this difficulty, these freshened surfaces are left oval in shape, so that the undenuded tract, instead of being as formerly of a uniform width, is now left trumpet-shaped. In other words, this undenuded portion on each flap is made to correspond with the opposite side, and to widen gradually from the edge of the uterine canal towards the outer edge of the divided portion of the cervix. Therefore, when the two flaps are brought together, the new canal through the cervix will be trumpet-shaped. As the uterus gradually returns to its normal size, and the change will be the most marked in the cervix, this new canal will then become of a natural and uniform diameter throughout. To make this canal of a proper size, we must be guided by the amount of hypertrophy in the flaps. It must bear some relation to the increased size of the flaps, and the trumpet shape is necessary, since the hypertrophy increases in degree from the bottom of the laceration towards the outer edges of the flaps.

I always operate with scissors, from the fact that I am accustomed to their use; I can perform the operation in less time with them and with less loss of blood. When the tissues are dense, I sometimes have to use a scalpel to denude the angle at the bottom of the laceration when confined to one side. Generally the circular artery is torn through at the time of the injury, and its course is consequently destroyed in the cicatricial line; but as a precaution, it is well to denude as superficially as possible at the outer angle.

To control the bleeding, which is sometimes profuse, I for many years used a loop of wire passed through a canula. The loop was passed over the flaps before the operation, and the latter was drawn up with a sufficient portion of vaginal tissue to keep the loop from slipping. The instrument was then secured by bending the wires back over the end of the canula after it had been slid along the wires in close contact with the uterus. In the place of this simple contrivance I had afterwards an instrument made, using a large watch-spring

which was tightened by means of the écraseur ratchet. Recently I have found that the instrument could be dispensed with in many cases, as a large injection of hot water given just before the operation, seems to contract the rents sufficiently to allow of but a moderate loss of blood.

The process of freshening the surfaces is very much facilitated by drawing the uterus gently down towards the vaginal outlet, and then having the organ steadied by a strong tenaculum in the hands of an assistant. The nearest portion, or that which is the lowest, should be removed first, since by doing so the view is less obstructed by blood running over the surface. The portion to be removed is to be hooked up with a small tenaculum, and the strip kept on the stretch while it is being separated, and if possible should be continued in a single piece from one side of the flap to the other. This is the best plan to insure the denudation of the whole surface when the oozing of blood is at all free. With the use of either the knife or scissors, the freshened surfaces should be made as smooth as possible and uniform in extent. The best results are obtained when we get union by the first intention, but to gain this it is necessary that the parts should be approximated with some degree of accuracy, while a projecting edge left to heal by granulation cicatrizes and afterwards contracts. The presence of a cicatricial cord across the cervix may afterwards give rise to as much disturbance as the original difficulty. It may be accepted as an axiom that a female is never well with any amount of cicatricial tissue on the cervix, and that its presence is frequently the unsuspected cause of excessive nervousness and of neuralgia in other parts of the body.

When the injury has been of some standing, and the tissues have become dense, the chief difficulty in the operation is experienced in passing the needles. The short round needle, which I was the first to use for operations about the vagina, has the advantage of making only a punctured wound. When the suture is introduced, it so fully occupies the track made by the needle that there is no oozing of blood, which is of frequent occurrence after the use of a needle with a cutting edge.

But the more dense and indurated the tissue, the less vascular will be the parts. Under these circumstances, the lance-pointed needle of Dr. Sims, being easier of introduction, answers best for the purpose; but if the tissues are soft, the round needle should be used. Three or four sutures are required for each side, if the laceration be extensive and a double one. They should be introduced from the outer portion of the flap to the edge of the surface which is to form the canal, and then from within outwards through the other flap to correspond. The chief object, however, is to make an accurate approximation along the vaginal surface, since the edges forming the canal will be kept in contact as the inner edges of the stave of a barrel are by a properly fitted hoop. When the bleeding has been troublesome, it is advisable to pass the first suture through the vaginal tissue a short distance below the angle of the laceration; the circular artery, or its branch, from which the oozing generally comes, will be secured by this plan. I have met with several cases where the bleeding was profuse on removing the cervical tourniquet after completion of the operation, but in each instance it was arrested promptly by an injection of hot water.

The subsequent treatment consists in remaining in bed for two weeks after the operation, for fear that the flaps may separate, while the perfect rest in the horizontal position will facilitate the decrease in the size of the uterus. There will be no necessity for keeping the bowels constipated, nor for restricting the diet, providing there be no contraindication, and the quality and quantity be suitable for one remaining in bed. The bladder should be emptied by means of a catheter, or a bed-pan should be used; for it is of great importance that the patient should not sit up in bed for ten or twelve days after the operation. A portion of the line is very apt to separate after the sutures have been removed if this care be neglected, and with one patient I found the flaps had separated entirely in consequence of the constrained position and exertion necessary to seat herself in bed on a *pot de chambre*. To get up would necessarily expose her, with all care, to the effects of

cold; and cellulitis, if it has existed, is likely to recur on a slight provocation. To be able to use a bed-pan is indeed an accomplishment in the female, for after childbirth and many operations to which she is subjected, an inability to do so is frequently attended with serious consequences. On the second or third day after the operation, a vaginal injection of tepid water should be given once a day, or night and morning, if there should be much discharge.

The sutures are generally removed on the seventh day, and some care is needed in withdrawing them, as the line of union is frequently weakened by carelessness in doing so. When the patient is placed on the left side and the cervix has been brought into view, by the use of Sims's speculum, the lower portion of the loop should be cut close to the end of the twist and then withdrawn. Each portion of the loop will then bind together the parts until it has been removed, while if we cut the upper part and make traction, the surfaces will be drawn asunder.

In my former paper, I pointed out that lacerations of the cervix were of very frequent occurrence; in fact, I doubt if a female can give birth to her first child without a partial laceration taking place. But if it is slight, it rapidly heals and causes no difficulty afterwards. Even extensive laceration may take place in the median line, through the anterior or posterior lip, and cause no after trouble, since the parts will heal promptly from being kept in close contact by the lateral walls of the vagina. It is only when the tear into the vaginal tissue, in this direction, extends at some distance beyond the cervix that any bad results follow. A vesico-vaginal fistula may remain after an anterior laceration; or the opening may heal along the vesico-vaginal septum, as well as through the cervix, but leave a sinus at the bottom of the fissure, through which the urine will escape into the uterus near the internal os. This difficulty is easily remedied by reproducing the original condition with a pair of scissors, removing then the track of the sinus and bringing the parts together again with sutures.

The results following an extensive posterior laceration are much more serious and difficult to relieve. When backward, and even when superficial, on the vaginal surface a contraction takes place which shortens the posterior cul de sac, producing a form of retroversion which is very difficult to relieve. If the laceration extends deeper into the tissues, and near enough to inflame the peritoneum in Douglas's cul de sac, we have, in addition with the retroversion, adhesions to the posterior wall of the uterus, binding it down so firmly that the difficulty is rarely ever overcome. But these results are rare and the exceptions to the rule, since we seldom meet with any bad effects from laceration either backward or forward.

When the laceration, however, is in a lateral direction, and extends beyond the crown of the cervix, we have at once coming into play a condition which will defeat all the reparative efforts of nature. This condition and the remedy I have already pointed out.

I have occasionally met with cases where it was impossible to demonstrate where the laceration had taken place, and yet the bad effects of the lesion were recognized. It would seem as if partial laceration took place from the internal os, on one or both sides to the outlet, through the mucous membrane and deeper tissues, without extending to the vaginal surface of the cervix. Through the patulous os and canal the mucous membrane is seen prolapsed, and the appearance is not unlike that presented after dilating with a sponge-tent when partial contraction of the canal has already taken place above, but has not yet extended to the external os. The cervix is frequently but little enlarged in diameter, but its walls are seen to be thinner than natural. I have treated these cases by dividing the cervix through on both sides, and after denuding, in connection with the incised surfaces, a narrow strip along the canal to reduce it in size, I have brought the flaps together as if a double laceration had occurred.

We frequently meet with cases where nature has attempted to repair the injury, and gaping of the flaps in a double laceration is prevented by a double cicatricial surface between

them which has healed by granulation. When this condition exists there is always much disturbance of the nervous system, and frequently it is the exciting cause of neuralgia in other parts of the body. The only remedy is to remove the whole mass in a V shape, and secure the surfaces thus made with sutures, as in the operation for double laceration.

When the case has been of long standing, many cysts will have formed and ruptured, from which cause contraction takes place along the edge of the mucous membrane of the canal and vaginal surface. The effect of this contraction is to convert the former flat sides of the flaps into two convexed surfaces in relation to each other. Were we simply to freshen these surfaces in a superficial manner, and then attempt to bring them together, we would fail in approximating the outer edges properly, without the sutures were twisted so tight that they would cut out. This tissue is cicatricial, and so dense a foreign body, that were we to succeed in obtaining union, it could be only temporary, for the previous condition would be soon reproduced for want of vitality. Not only is it necessary to remove entirely this projecting surface, but even partially to excavate, that the sides of the flaps may be brought into close contact throughout, when the sutures have been secured.

When retroversion has existed and a pessary has been used, it is best, as a rule, to remove it at the time of the operation, and only replace the instrument when the patient begins to stand on her feet. If the uterus is left anteverted, as it should be, after the operation, and then replaced, by the finger if necessary, when the sutures are removed it will generally remain in this position while the patient is in bed. But should the uterus be allowed to become retroverted again, it will be crowded lower into the vagina as soon as the patient begins to exercise. At once traction will be made by the walls of the vagina on the anterior and posterior flaps. The result will be that by absorption the original condition will be reproduced, or by obstruction to the circulation, from position, the hypertrophy of the uterus will increase and an erosion will

soon form on the cervix which will extend to the uterine canal. This most important feature in the treatment, as to the necessity for placing the uterus in a proper position, is frequently entirely overlooked, not only for the benefit preparatory to the operation, but as nearly the chief means for obtaining beneficial results afterwards. I can state positively, as the result of a large experience, that not the slightest good will result from the operation without the proper treatment, and the patient will be fortunate if an old previously existing cellulitis be not lit up again by the additional source of irritation.

Under favorable circumstances the condition of the patient will always be benefited by the operation, if she has received the proper preparatory treatment and that which is necessary afterwards.

The principles of this operation are simple, and its execution is not difficult under any circumstances; yet the greatest success will attend always the efforts of the operator who looks most to the details of treatment.

With a woman's over-sensitive nervous system, through which her organic life is so readily impressed, an attention to minute detail is of the greatest importance; and more in this branch than in the practice of general surgery, where the necessity has long been fully recognized.